REMARKS

Drawings

The drawings stand as objected to because the notation and arrows used to specify components are not clear. A replacement drawing sheet 1, containing Figure 1, is submitted herewith. In this figure, the symbols used to indicate the portion of the formation that contains water is replaced with a shading instead of the symbols. Applicant respectfully submits that the drawing is now clear. This objection is therefore respectfully traversed.

Specification

The specification stands as objected to because of informalities that include four poorly worded phrases that are corrected by the preceding amendment to the specification. These amendments do not add new matter, and correct the informalities as suggested by the Examiner. This objection is therefore respectfully traversed.

Claim Rejection under 35 USC §112

Claims 5 and 10 stand as rejected under 35 USC §112 because the term "such as" within the claim. The preceding amendment to the claims removes this phrase. This rejection is therefore respectfully traversed.

Claim Rejection under 35 USC §102

Claims 1-3, 7, 8, and 12 stand as rejected under 35 USC §102. The preceding amendment to the claims adds to the limitations of independent claim1, limitations that require the first compound comprise an alkaline material, and that the second compound

comprises iron chloride and when contacted with the alkaline material will result in a salt precipitating. Independent claim 8 is likewise amended to require that the kit of materials include an alkaline material, and a material that, when contacted with the alkaline material, results in a salt precipitating.

Independent claim 1 now claims a method for selectively reducing the permeability of one or more relatively permeable geological layers of an oil-bearing formation, to inhibit breakthrough of driving fluid from a driving fluid injection well via at least one of said layers into an oil-producing well, which method comprises the steps of: injecting a driving fluid comprising a first compound wherein the first compound comprises an alkaline material via an injection well; detecting the first compound in a well fluid of the oil production well; and upon detection of the first compound, injecting a second compound, the second compound comprising iron chloride and will result in a salt precipitating in at least one relatively permeable geological layer through which breakthrough of the driving fluid into the oil production well has occurred.

The claims are rejected over US patent 3,285,338 ("Boston"). Boston suggests a method for plugging zones of relatively high permeability through which a driving fluid is breaking through from an injection well to a production well by injecting back through the injection well a component that will from a plug when contracting the drive fluid. Boston does not suggest that the first component comprise an alkaline material nor that the second compound comprise iron chloride. The present claims are therefore novel over Boston. This rejection is therefore respectfully traversed.

Claim Rejection under 35 USC §103 based on Boston and Sandiford

Claims 4, 5, 9, and 10 stand as rejected under Boston in light of US patent no. 4,147,211 ("Sandiford"). Sandiford discloses the use of ferric chloride as a cross-linking agent for crosslinking polymers that have been injected into a formation in order to inhibit flow through relatively permeable layers of a formation. Although Sandiford discloses the use of ferric chloride to form a plugging material, the application is to cross link polymers, not to form insoluble salts. The insoluble salts of the present invention have considerable advantages over crosslinking polymers, as discussed in the background section of the present application. The ferric chlorides in the present invention also form solids by a different mechanism than the mechanism of Sandiford. Because the purpose of the ferric chlorides is different than the purpose of the ferric chlorides in the present invention, a person of ordinary skill in the art would not combine Sandiford with Boston to arrive at the present invention. In other words, a prima facie basis for a rejection under 35 USC §103 is not presented. This rejection is therefore respectfully traversed.

Claim Rejection under 35 USC §103 based on Boston and Johnston

Claims 6 and 11 stand as rejected under Boston in light of US patent no. 3,958,638 ("Johnston"). Johnson suggests encapsulating a polymer solution to prevent thickening of the polymer solution prematurely. Ferrous chloride is mentioned as a suitable reducing agent for a polymer crosslinking, wherein the polymers are crosslinked after the encapsulating material is gone. As with the rejection based on Boston and Sandiford, there is no suggestion to use the ferric chloride from Johnston with the alkaline solution of Boston to form a plug by deposition of an insoluble salt. Thus, no prima facie basis for this rejection of the present claims is presented. The rejection is respectfully traversed.

Summary

The objections and rejections have each been traversed. Allowance of the present claims is therefore respectfully requested.

If it would be considered helpful in resolving any issues in the case, the Examiner is encouraged to contact the undersigned at the number below.

Respectfully submitted,

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